



# CUCUMBER

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## Production & Spray Guide

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# Cucumber Production Guide

“Integrated Crop Solution”

## General

Cucumber (*cucumis sativus*) is a member of the Cucurbitaceal family native to Africa. Cucumber is an annual deep rooted crop with plenty of tendrils and has hairy leaves. Optimum growing temperatures are between 20° C to 25° C. At temperatures below 16°C growth slows down and cucumbers are frost sensitive. Most cultivars are Monoecious, they have separate male and female flowers on the same plant. They are not Parthenocarpic like Greenhouse cucumbers which do not require pollination of flowers for fruit production. As Monoecious cucumbers are dependent on bees for pollination it is recommended that two to three hives per hectare are placed near the field. Up to 8 bee visits per flower is required to ensure pollination for fruit formation.

## Spacing

Spacing:- Rows can be 1.2m - 1.8m apart on the flat and 50cm – 1m apart in row, depending on what plant population is needed and varieties selected. Plastic mulch can be applied where drip irrigation is used. Plastic mulch helps control weeds, improves the use of water and fertilizer. It also reduces incidents of fruit rot where the fruits are not in contact with the soil. If cucumbers are to be grown on beds a spacing of 1.2m – 1.8m bed centre to bed centre then 2 rows can be put on the top of the beds. The rows can be 40cm apart, and in row of 50cm – 80cm apart. Cucumbers can be direct seeded in the ground or seedlings grown in a nursery like Prime Plants Nursery for transplanting. If direct seeding is used then the soil temperature must not be below 13°C or poor uneven germination will take place. With direct seeding the depth of the seed should be 20 mm – 28mm deep. Seedlings need to be covered when transplanted up to the top of the plug. Plant populations can vary from 14,000 per hectare up to 40,000 per hectare.

## Trellising

Cucumbers can be trellised in order to achieve better yields with better quality of the fruits. If trellising is used it should be 1.6m up to 1.8m in height. Strong poles are spaced every 4m apart. A twelve gauge wire is placed about 12cm off the soil level and a 8 gauge wire is pulled on the top. Twine or netting can be strung between the wires so plants can be trained up. Planning ahead for rotation purposes, if the trellising is used say for a tomato crop then the cucumber crop can follow the tomato crop using the same trellis system saving on double work. Training needs to be done on a weekly basis to ensure all the vines are tied onto the netting or twine. Pinch out the side shoots from the bottom up to around 50cm, after this leave them to grow out.

### Advantages of trellised cucumbers are:-

- 1) Increased picking efficiency.
- 2) Better yields.
- 3) Straight fruits
- 4) Uniform colour, not like fruits grown on the soil which have a white/yellow area where it has been lying on the soil surface.
- 5) Reduces fruit loss to soil diseases.
- 6) Better pest management.

### Disadvantages:-

- 1) Extra cost of trellising materials.
- 2) Extra labour costs to erect, dismantle and training of the vines.
- 3) Plants are prone to wind damage therefore wind breaks need to be put in, in wind prone areas by putting up 50% shade cloth of 2m height up wind of the crop.

## Field Preparation

Ploughing or sub soiling needs to be done to a depth to break up a hard pan if present in the soil. The PH should be between 5.5 – 6.0. Cucumbers are adapted to a wide variety of soil types that have good drainage and adequate water holding capacity. Soil should be harrowed to a reasonable tilth after ploughing or sub soiling so direct seeding can have good soil to seed contact.

## Fertilization

Rates can be based on soil sample analysis results.

Basal:- Compound “D” at 600kgs – 750kgs per hectare can be used.

Top dressing:- Apply first application two weeks after germination or transplanting of 50kg per hectare AN. Then every two weeks until first fruit set, then add 35kgs per hectare Muriate of Potash and every two weeks from then on both the AN and Muriate of Potash. Potassium helps to produce a deep green colour to the fruit as well as firm flesh and helps to produce good yields.

Manure or Compost applications improve quality and yields. Up to 20tons per hectare is recommended, as this helps to improve soil texture and improves root growth.

## Irrigation

Cucumbers need a constant water supply to enable a good yield of quality fruits. Generally soils must not dry out at planting or transplanting. Soil types will depend on the frequency and amount. From flowering to fruit development depending on the weather, amounts should be supplied by checking on evaporation pan figures. Roughly 50 mm irrigation is required per week. Normally drip irrigation is recommended for cucumbers.

## Maturity

Generally first harvest from planting takes 45 – 55 days. Depending on disease and pest control cucumbers can normally carry on producing for 14 weeks. At harvest the fruit must have reached full diameter and while the seeds inside are still soft and small. Normally the average length is between 15cm – 20cm and a diameter 4cm – 7cm. From pollination to harvest is normally 15 – 18 days. Cucumber plants set fruits and develop over a long period of time, therefor marketable fruits extend over a period of time.

## Harvesting

Cucumbers are handpicked. When picking, the fruits should be clipped or snapped near the stem and not pulled off or damage to the vine will occur. Once picked place gently in the picking crate and keep cool and covered with a damp cloth. Once transported to the pack shed keep the fruits cooled down to 10°C for best shelf life. Remove any oversize fruits left on the vine by mistake from the previous harvest as they will drain the plant of all nutrients and can cause yield loss. Damaged or decaying fruit should also be removed. If Cucumbers have to be stored the average shelf life is about 10 – 14 days at a temperature of between 10° C – 13° C, and 90% to 95% RH.



# Cucumber Spray Guide

Stage	Pre-Plant	Sowing & Emergence	Seedling & Vegetation	Early Flowers	Early Fruits	Fruiting & Picking
Days:	-7	0-10	10-28	28-35	35-42	45-60
Pest Problems						
Nermaiodes	Soligo					
Soil Pests		Actara Soil Drench				
Cutworms		Karate Zeon				
Leafminer			Trigard / Dymamec			
Red Spider Mites			Dymamec / Polo			
Aphids & Whitefly				Actara / Ampligo / Polo		
Pumkin Fly				Lebayoid		
Disease Problems						
Damping off		Apron Star Seed Dress				
Bacterial Complex			Amistar Top/Score			
Powdery Mildew				Reus/Ridomi/Folio Gold		
Anthraxnose			Amistar Top/Bravo			
Virus Complex		Actara Soil drench				
Weed Problems	Below are off-labe suggestions; grower must do own tests for crop damage.					
Before planting - post emergence perennials		Touchdown				
Before planting - post emergence annuals		Gramoxone / Touchdown				
Post-emergence: grasses		Dual Magnum				

CROP	DAYS TO MATURITY		PLANT SPACING (cm)		PLANTS/HA X1000	AVERAGE SEED PER GRAM	SEED REQUIREMENT (Kg/Ha)	COMMON PESTS	COMMON DISEASES
	WARM	COOL	IN ROW	BETWEEN					
Garden Beans	55	65	2x7*	50	285	4-5	75	Bollworm	Rust Anthracnose Halo Blight
Beetroot	80	110	10*	20	450	50-60	8	Aphids	<i>Ccpa</i> <i>Rzoc</i>
Broccoli	70	90	40	70	36	225	0.2	Diamondback Moth Aphids	Black Rot White Blister
Butternut	90	120	50	100	20	8-10	3	Fruit Fly	Gummy Stem Blight Anthracnose
Cabbage	80	110	40	50	30	300	0.2	Diamondback Moth Aphids	Black Rot Club-root S
Carrot	90	120	3*	15	1100	800	2	Nematodes	<i>ta</i>
Cauliflower	85	110	40	70	36	240	0.2	Diamondback Moth Aphids	Black Rot Club-root
Cucumber Field	60	85	40	150	16	40	16 000 Seeds	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Cucumber Tunnel	65	85	45	150	16	40	3 per m <sup>2</sup>	Red Spidermite Aphids Whitefly	<i>Fm</i> Powdery Mildew Downy Mildew
Eggplant	75	90	50	75	27	220	0.15	Thrips Aphids	Powdery Mildew
Gem Squash Semi-bush	50	70	35	150	18-22	10-12	4	Pumpkin Fly	Powdery Mildew
Gem Squash Vine	55	80	50	150	14	10-12	2	Aphids	Virus Diseases
Hubbard Squash	110	130	100	150	7	6	1.5	Pumpkin Fly Aphids	Powdery Mildew
Lettuce	50	70	30	60	55	800-1000	0.05-0.07	Aphids Leafminer	Powdery Mildew Bacterial Rot
Marrows	35	55	40	150	18	8-10	2.5	Fruit Fly Whitefly	Virus Diseases Powdery Mildew
Melon	85	100	40	150	16	20	1	Fruit Fly	Anthracnose Fusarium Root Rot
Onions	170	190	8*	20	850-1000	250	3.5	Thrips	White Bulb Rot Pink Root Rot <i>ta</i>
Peppers	70	85	2x40*	150	30-35	150	0.25	Aphids Thrips	Virus Diseases Phytophthora Root Rot
Pumpkin Semi-bush	90	120	80	180	8	4	2	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Pumpkin Vine	120	140	100	180	5	4	1.5	Pumpkin Fly Cutworm	Powdery Mildew Fruit Rots
Sweet corn	75	100	20	90	55	8	8	Stalk Borer Bollworm	Rust NCLB
Swiss chard	60	75	20*	45	200	60	4-6	Aphids	<i>Ccpa</i>
Tomato	80	100	40	150	16	250	0.1	Bollworm Whitefly Nematodes	Blight Bacterial Wilt Viruses
Watermelon	80	90	50	180	6	20	0.3	Fruit Fly	Gummy Stem Blight Anthracnose